spectively, after operation. The patient has since gained 25 pounds in weight, and is in excellent health three years later, although at the last examination the bladder urine showed the presence of some colon bacilli and shreds of mucus.

OTOLOGY

UNDER THE CHARGE OF

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Experimental Investigation Concerning the Influence of Ethyl and Methyl Alcohol upon the Organ of Hearing. A Contribution to the Pathogenesis of Neuritis Acustica Alcoholica.—The deleterious effect of many drugs upon the organ of hearing is well known and the results of the ingestion of quinin and salicylic acid and of various arsenical combinations, in this respect, have been frequently demonstrated. Of the effects of such other substances as chenopodium oil, lead, silver and mercurial salts, phosphorous and carbonic acid but little is definitely known and our knowledge of the effect of alcohol upon the ear is equally imperfect, begin confined, according to the author, mainly to the results of occasional and imperfect clinical observations and of two lines of experimental pathological investigation. The protracted consumption of alcohol may result eventually, as has been demonstrated, in inflammation and degeneration of the auditory nerve, but notwithstanding the extent of alcoholism, alcoholic polyneuritis is of comparatively rare occurrence and especially so as exhibited in the auditory nerve. Marian and Ostmann have shown that alcohol has a lesser affinity for the auditory nerve than the drugs previously mentioned and that the deleterious influence of alcohol is much more frequently exhibited in other than the auditory nerve, especially the optic nerve. Zytowitsch gives as the results of his investigations in alcohol poisoning in rats and guinea-pigs changes exhibiting themselves first in the ganglion spirale, next in the efferent nerves in the lumina spiralis ossea and, finally, in the organ of Corti, the basal whorl being the last and the least affected. Hemorrhages were notable in all cases, less frequently in the endolymphatic portion; the vestibular region was also included in the area of these ecchymoses. Tadokoro found as the result of his investigations in the majority of his cases an osteoplastic labyrinthitis and the author refers the hemorrhages in the first instance to postmortem changes and the labyrinthine showings in the second instance to suppurative infection from the middle ear. The clinical studies of Marian and the supplementary clinical contributions of Zytowitsch refer the aural changes incident to alcoholism, both chronic and acute, to the labyrinth, and as exhibited, preponderatingly, in men between twenty-five and fifty years of age. In no instance was there opportunity for postmortem evidence of the clinically inferable labyrinthine changes. Under these circumstances, YUTAKA NAKAMURA (*Passow and Schaefer's Archiv*, December, 1914), undertook a series of carefully conducted investigations into the labyrinthine conditions incident to alcoholic poisoning, using for his material only carefully selected guinea-pigs, all of whom were previously examined as to hearing by the method of Preyer, auricular reflex, and as to the integrity of the vestibular function by the caloric test. The alcohol, usually 40 per cent. strength, was administered by means of a soft rubber catheter passed into the stomach, the jaws of the animal being controlled by a mouth clamp, devised by the author and consisting of two S-shaped metal rods or tubes controlled by a set screw, the risk of internal injury to the animal in process of administration of the alcohol being thus minimized; in one series of cases acute poisoning was ensured by large doses, in a second series, a chronic effect was produced by daily administration in small doses, the clinical symptoms of the poisoning usually manifesting themselves within ten minutes, though this, and the degree of effect, proportionately, varied greatly in individual cases. The nutrition of the subjects was regulated according to the daily determination of the body-weight in order to secure as nearly as possible an assumed mean of nutrition. The evidences of the intoxication in both the acute and the chronic cases corresponded to those commonly observed in the human subject, but at no time throughout the experiments, except during the toxic periods, was there any determinable decrease of hearing or of the vestibular function. The method of preparation of the material was, in the main, that of Yoshii with certain minor modifications, but including fixation with the brain *in situ* and the acusticus and medulla undivided, and, throughout the examination, especial care was taken in other and similar respects to avoid traumatic postmortem results which might serve to confuse the conclusions to be drawn from the actual changes in an auditory apparatus of such exceeding delicacy. In conclusion, the author says that both ethyl and methyl alcohol have an injurious effect upon the ear, and especially upon the auditory nerve, the three components of the peripheral cochlear system being more frequently and more severely affected, nerve fibres, ganglion cells and cells of Corti, than the vestibular and facial nerves, pathological changes in the vestibular and geniculate ganglia being in no instance found. The alcohol attacks, as a nerve poison, only the neural elements of the organ of hearing, all the remaining tissues in the middle ear and labyrinth, including bloodvessels and bony structures remaining unaffected. The pathological changes in the acoustic system of the auditory nerve consist mainly in degenerative, atrophic processes with segmental destruction of the cochlear fibres, degenerative implication of the spiral ganglion cells and the cells of Corti without corresponding evidence of inflammation, these degenerative changes being, moreover, more pronounced in the peripheral portion of the cochlear nerve, in the fibrils of the lamina spiralis ossea and in the modiolus than in the cochlear trunk itself, the changes in the spiral ganglion cells of the upper cochlear whorl being more pronounced than in the lower portion. These investigations seemed to prove that the hematogenous changes in the cochlear nerve occurred, in the three portions of the system almost coincidently, in cases of acute alcoholic poisoning, whereas the cells of Corti, in the more chronic cases, remained sometimes unaffected and that the hemorrhages in the middle ear and labyrinth observed by Zytowitsch were the result not of poisoning, but of an extrinsic trauma.

Parotid Fistula in the External Auditory Canal.—The first case of this kind was described by Politzer, in 1906, and that of KRETSCHMANN (*Arch. f. Ohrenh.*, xcvi, 8) is similar in that, in both cases, the symptom occurred in otherwise entirely normal ears without evidence, moreover, of parotid disturbance, suddenly without pain and without other than the immediately induced sensation, an outflow appeared from the ear. Otoscopic examination revealed a swelling upon the canal wall about 4 millimeters in diameter, in the author's case, on the anterior superior and, in the case of Politzer, on the inferior bony canal wall, this swelling expanded and subsided coincidently with the movement of the jaw in chewing; at its base an opening in the bony canal wall could be determined by means of a probe, the swelling being, in fact, a hernial protrusion filled either with fluid or with glandular tissue. In neither case did the history give a clue to the origin of the aural manifestation. Politzer regarded it in his case as a cystic extension of the parotid which had burst through the membrane closing the opening due to a dehiscence of bone in the canal wall; the treatment consisted in rest and in cauterization of the projected area.

The Pathogenesis and Treatment of Otosclerosis.—DENKER (*Deutsch. med. Wchnschr.*, 1914, xix) denominates as otosclerosis a group of cases in which, with patent tympanopharyngeal tubes and nearly normal aspect of the drum-heads, the clinical picture is presented of a progressive, definitely determinable, by functional examination, steadily increasing, difficulty in hearing. Structurally, there is an increasing immobilization of the stapes, spongiosity of the labyrinth capsule and, sequent thereto, atrophic degenerative changes in the nerve end apparatus of the labyrinth. Etiologically, the question as to whether the otosclerosis is secondary to a disorder of the tympanic mucosa or originates primarily in the bony capsule is not yet decided, but the majority of authorities incline to the latter view, in some instances the otosclerosis being regarded as typical of rheumatic arthritis. Furthermore, the incidence and progress of the spongiosity and whether it is of inflammatory origin or otherwise has not yet been determined. It is evident from all statistical evidence that the preponderating number of cases occur in women and the author suggests that gestation has a distinct bearing upon the beginning of an otosclerosis, or upon its subsequent progress and that the function of the hypophysis cerebri may come to be found to have a bearing upon the existence of this aural condition. Another view which has its adherents is that the otosclerosis has its origin in a disorder of the circulatory system and it is certainly true that hereditary predisposition is apparently an important factor, while syphilis and tuberculosis are of comparative importance etiologically The therapeusis of otosclerosis is practically powerless, as might be inferred from the pathological findings and from the results of attempts at treatment by means of radium, electromotor massage and varied internal medication.